AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) An apparatus configured for being introduced into a patient's anatomy comprising:

a therapeutic hollow guidewire having a high strength proximal core section, ~~and~~ a flexible distal core section, a lumen extending within the proximal and distal core sections, and a distal end comprising a distal tip coil bonded to the distal core section and ~~having~~ a distal tip member bonded to a distal end of the coil; and

at least one optical fiber slideably disposed ~~through~~ within the lumen of the therapeutic guidewire, having a distal tip which is slidably positionable within the distal tip coil and which has an optically exposed configuration in which the optical fiber distal tip is in optical contact with the patient's anatomy outside the guidewire from within the distal end of the guidewire such that the optical fiber distal tip is configured for light transmission and/or reception so that the optical fiber is configured to sense and transmit diagnostic information from at least one of before, during, and after a therapeutic treatment, ~~the at least one optical fiber slideable to be exposed to a vessel through the distal tip~~.

2. (Currently amended) The apparatus of claim 1 wherein the distal tip member is clear, such that the distal tip of the fiber disposed within and surrounded by the clear

distal tip is in the optically exposed configuration ~~the at least one optical fiber is exposed within a vasculature of a patient at least at one location along the therapeutic guidewire~~.

3. (Currently amended) The apparatus of claim 2 wherein the apparatus is coupled to a data processing system and the at least one optical fiber is configured to sense vessel and blood characteristics.

4. (Original) The apparatus of claim 3 wherein the vessel and blood characteristics are selected from the group consisting of hemodynamic characteristics, hematological parameters related to blood and blood components and thermal parameters of the vasculature.

5. (Original) The apparatus of claim 1 wherein the therapeutic guidewire is operatively coupled to a catheter.

6. (Currently amended) An apparatus comprising:

a therapeutic hollow guidewire having a high strength proximal core section and flexible distal core section, the therapeutic guidewire configured to operatively receive a treatment device;

a polymeric jacket disposed about the distal core section; and

at least one optical fiber slideably disposed within the therapeutic hollow guidewire, having a distal tip which has an optically exposed configuration in which the optical fiber distal tip is in optical contact with the patient's anatomy outside the guidewire from within a distal end section of the guidewire such that the optical fiber distal tip is configured for light transmission and/or reception to sense and transmit vessel

and blood characteristics ~~wherein the distal core section has at least one opening to allow the optical fiber to be exposed to a vasculature of a patient~~.

7. (Original) The apparatus of claim 6 wherein the treatment device is selected from the group consisting of intravascular device, intraluminal device, intraductal device and intraorgan device.

8. (Cancel)

9. (Cancel)

10. (Currently amended) The apparatus of claim 6 wherein the apparatus is coupled to a data processing system and the vessel and blood characteristics are selected from the group consisting of hemodynamic characteristics, hematological parameters related to blood and blood components and thermal parameters of the vasculature.

11. (Currently amended) The apparatus of claim 6 wherein the therapeutic guidewire ~~comprises:~~

~~an elongated guidewire body having a distal core section axially coupled to a proximal core section by~~ includes a connecting member coupling the proximal and distal core sections; and

an atraumatic distal tip formed at a distal end of the distal core section.

12. (Cancel)

13. (Cancel)

14. (Currently amended) The apparatus of claim ~~11~~ 35 wherein the ~~at least one~~ optical fiber is ~~coupled to the elongated guidewire body~~ fixedly secured to the guidewire at least at one point along thereon.

15. (Currently amended) The apparatus of claim ~~11~~ 35wherein the ~~at least one~~ optical fiber is slidably disposed within the lumen of the guidewire ~~movable within the elongated guidewire body~~.

16. (Cancelled)

17. (Cancel)

18. (Original) The apparatus of claim 5 wherein the at least one optical fiber is marked with a radiopaque substance.

19. (Currently amended) The apparatus of claim ~~12~~ 11 wherein the atraumatic distal tip includes a clear polymeric material sheath coupled to the distal end of the flexible coil.

20. (Currently amended) The apparatus of claim 11 wherein the atraumatic distal tip is metallic ~~formed by using a metal~~.

21. (Currently amended) The apparatus of claim 11 wherein the polymeric jacket is coupled to at least one point along an outer surface of the distal core section, and the atraumatic distal tip is coupled to a distal end of the polymeric jacket.

22. (Currently amended) A system for sensing vessel and blood characteristics, the system comprising:

a data processing system; and

an apparatus coupled to the data processing system, the apparatus comprising a therapeutic hollow guidewire having a high strength proximal core section and flexible distal core section, a lumen extending within the proximal and distal core sections, and a distal end comprising a distal tip coil bonded to the distal core sections and a distal tip

member bonded to a distal end of the coil, ~~having a distal tip~~ and at least one optical fiber ~~slideably~~ disposed therein, the optical fiber having a distal tip which has an optically exposed configuration in which the optical fiber distal tip is in optical contact with the patient's anatomy outside the guidewire from within the distal tip coil laterally through a space between turns of the coil, such that the optical fiber distal tip is configured for light transmission and/or reception, ~~, the at least one optical fiber slideable to be exposed to a vessel through the distal tip~~, the optical fiber capable to sense vessel and blood characteristics and transmit the sensed vessel and blood characteristics to the data processing system.

23. (Original) The system of claim 22 wherein the vessel and blood characteristics are selected from the group consisting of hemodynamic characteristics, hematological parameters related to blood and blood components and thermal parameters of the vasculature.

24. (Currently amended) A method of sensing vessel and blood characteristics, the method comprising:

operating a data processing system coupled to a therapeutic hollow guidewire having a lumen, a high strength proximal core section and flexible distal core section having a distal tip, and at least one optical fiber having a distal tip slideably disposed ~~therein, the at least one optical fiber slideable~~ in the hollow guidewire to be positioned in an optically exposed configuration in which the optical fiber distal tip is in optical contact with the patient's anatomy outside the guidewire from within a distal end section of the guidewire such that the optical fiber distal tip is configured for light transmission and/or

reception and ~~exposed to a vessel through the distal tip,~~ such that light signals are transmitted to the desired location in the vasculature and reflected light signals are collected by the data processing system; and

processing the reflected light signals to provide vessel and blood characteristics.

25. (Original) The method of claim 24 wherein the vessel and blood characteristics are selected from the group consisting of hemodynamic characteristics, hematological parameters related to blood and blood components and thermal parameters of the vasculature.

26. (Previously Presented) The apparatus of claim 1, further comprising a polymeric jacket disposed about the distal core section.

27. (Previously Presented) The system of claim 22, further comprising a polymeric jacket disposed about the distal core section.

28. (Cancel)

29. (Previously Presented) An apparatus as in claim 1 wherein the optical fiber provides an image of an element from light gathered from the element, the light being conveyed through the optical fiber.

30. (Previously Presented) An apparatus as in claim 6 wherein the at least one optical fiber provides an image of an element from light gathered from the element, the light being conveyed through the at least one optical fiber.

31. (Previously Presented) A system as in claim 22 wherein the at least one optical fiber provides an image of an element from light gathered from the element, the light being conveyed through the at least one optical fiber.

32. (Previously Presented) A method as in claim 24 wherein the optical fiber provides an image of an element from light gathered from the element, the light being conveyed through the optical fiber.

33. (New) The system of claim 22 wherein the optical fiber tip is bent away from a centerline of a distal end section of the guidewire.

34. (New) The system of claim 22 wherein an end surface of the optical fiber tip is oriented at an angle relative to a transverse plane perpendicular to a longitudinal axis of the fiber.

35. (New) An apparatus configured for being introduced into a patient's anatomy comprising:

a) a hollow guidewire having a relatively high strength proximal core section, a relatively flexible distal core section, a lumen extending within the proximal and distal core sections, a distal tip coil on the distal core section, and a clear polymeric distal tip member bonded to a distal end of the coil; and

b) at least one optical fiber disposed within the lumen of the guidewire, having a distal tip which is within and surrounded by the clear distal tip member such that the distal tip of the fiber is in optical contact with the patient's anatomy outside the guidewire from within the clear distal tip member and is configured for light transmission and/or reception in the patient's anatomy.